SEQUENCE LISTING

<110> Misra and Kay

<120> Trangenic Plants that are Resistant to a Broad Spectrum
of Pathogens

<130> 673243

<140>
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<150> 60/125,072
<151> 1999-03-17

<150> PCT/CA00/00288
<151> 2000-03-16

<150> 09/936,885
<151> 2001-09-17

<160> 41

<170> PatentIn Ver. 2.0

<210> 1
<211> 443
<212> DNA
<213> Phyllomedusa bicolor

<220>
<221> CDS
<222> (58)..(294)

<400> 1
ccacgcgtcc gattctgtcc tccagtactc aacacattct gaattgtaag aacaaac 57

atg gat atc ctg aag aaa tct ctt ttc ctt gta tta ttc ctt gga ttg 105
Met Asp Ile Leu Lys Lys Ser Leu Phe Leu Val Leu Phe Leu Gly Leu
1 5 10 15

gtt tcc ctt tcc atc tgt gaa gaa gag aaa aga gaa aat gaa gat gag 153
Val Ser Leu Ser Ile Cys Glu Glu Glu Lys Arg Glu Asn Glu Asp Glu
20 25 30

gag aaa caa gat gac gag caa agt gaa atg aag aga gct atg tgg aaa 201
Glu Lys Gln Asp Asp Glu Gln Ser Glu Met Lys Arg Ala Met Trp Lys
35 40 45

gat gtg tta aaa aaa ata gga aca gtg gcc tta cat gca gga aaa gcg 249
Asp Val Leu Lys Lys Ile Gly Thr Val Ala Leu His Ala Gly Lys Ala
50 55 60

gct tta ggt gca gtt gct gat aca ata agt caa gga gag caa taa 294
Ala Leu Gly Ala Val Ala Asp Thr Ile Ser Gln Gly Glu Gln
65 70 75

agtgaaaaaa atttaaaatt gaattactct aaatagaaca attagcaata attgtgtcaa 354

acctacatta aagcatactg aaccaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 414

aaaaaaaaaa aaaaaaaaaa aaaaaaaaa 443

<210> 2
<211> 78
<212> PRT
<213> Phyllomedusa bicolor

<400> 2
Met Asp Ile Leu Lys Lys Ser Leu Phe Leu Val Leu Phe Leu Gly Leu
1 5 10 15

Val Ser Leu Ser Ile Cys Glu Glu Glu Lys Arg Glu Asn Glu Asp Glu
20 25 30

Glu Lys Gln Asp Asp Glu Gln Ser Glu Met Lys Arg Ala Met Trp Lys
35 40 45

Asp Val Leu Lys Lys Ile Gly Thr Val Ala Leu His Ala Gly Lys Ala
50 55 60

Ala Leu Gly Ala Val Ala Asp Thr Ile Ser Gln Gly Glu Gln
65 70 75

<210> 3
<211> 27
<212> PRT
<213> Phyllomedusa bicolor

<400> 3
Asp Val Leu Lys Lys Ile Gly Thr Val Ala Leu His Ala Gly Lys Ala
1 5 10 15

Ala Leu Gly Ala Val Ala Asp Thr Ile Ser Gln
20 25

<210> 4
<211> 31
<212> PRT
<213> Phyllomedusa bicolor

<400> 4
Ala Met Trp Lys Asp Val Leu Lys Lys Ile Gly Thr Val Ala Leu His
1 5 10 15

Ala Gly Lys Ala Ala Leu Gly Ala Val Ala Asp Thr Ile Ser Gln
20 25 30

<210> 5

<211> 36
<212> PRT
<213> Pachymedusa dacnicolor

<400> 5
Gly Met Trp Ser Lys Ile Lys Asn Ala Gly Lys Ala Ala Ala Lys Ala
1 5 10 15

Ser Lys Lys Ala Ala Gly Lys Ala Ala Leu Gly Ala Val Ser Glu Ala
20 25 30

Leu Gly Glu Gln
35

<210> 6
<211> 31
<212> PRT
<213> Pachymedusa dacnicolor

<400> 6
Ala Leu Trp Lys Thr Leu Leu Lys Lys Val Gly Lys Val Ala Gly Lys
1 5 10 15

Ala Val Leu Asn Ala Val Thr Asn Met Ala Asn Gln Asn Glu Gln
20 25 30

<210> 7
<211> 35
<212> PRT
<213> Agalychnis annae

<400> 7
Gly Met Trp Ser Thr Ile Arg Asn Val Gly Lys Ser Ala Ala Lys Ala
1 5 10 15

Ala Asn Leu Pro Ala Lys Ala Ala Leu Gly Ala Ile Ser Glu Ala Val
20 25 30

Gly Glu Gln
35

<210> 8
<211> 29
<212> PRT
<213> Agalychnis annae

<400> 8
Gly Met Phe Thr Asn Met Leu Lys Gly Ile Gly Lys Leu Ala Gly Gln
1 5 10 15

Ala Ala Leu Gly Ala Val Lys Thr Leu Ala Gly Glu Gln
20 25

<210> 9
<211> 30
<212> PRT
<213> Agalychnis annae

<400> 9
Ser Leu Trp Ser Lys Ile Lys Glu Met Ala Ala Thr Ala Gly Lys Ala
1 5 10 15

Ala Leu Asn Ala Val Thr Gly Met Val Asn Gln Gly Glu Gln
20 25 30

<210> 10
<211> 34
<212> PRT
<213> Phyllomedusa sauvagei

<400> 10
Ala Leu Trp Lys Thr Met Leu Lys Lys Leu Gly Thr Met Ala Leu His
1 5 10 15

Ala Gly Lys Ala Ala Leu Gly Ala Ala Ala Asp Thr Ile Ser Gln Gly
20 25 30

Thr Gln

<210> 11
<211> 34
<212> PRT
<213> Phyllomedusa sauvagei

<400> 11
Ala Leu Trp Phe Thr Met Leu Lys Lys Leu Gly Thr Met Ala Leu His
1 5 10 15

Ala Gly Lys Ala Ala Leu Gly Ala Ala Ala Asn Thr Ile Ser Gln Gly
20 25 30

Thr Gln

<210> 12
<211> 30
<212> PRT
<213> Phyllomedusa sauvagei

<400> 12
Ala Leu Trp Lys Asn Met Leu Lys Gly Ile Gly Lys Leu Ala Gly Lys
1 5 10 15

Ala Ala Leu Gly Ala Val Lys Lys Leu Val Gly Ala Glu Ser
20 25 30

<210> 13
<211> 27
<212> PRT
<213> Phyllomedusa sauvagei

<400> 13
Ala Leu Trp Met Thr Leu Leu Lys Lys Val Leu Lys Ala Ala Ala Lys
1 5 10 15

Ala Leu Asn Ala Val Leu Val Gly Ala Asn Ala
20 25

<210> 14
<211> 29
<212> PRT
<213> Phyllomedusa sauvagei

<400> 14
Gly Leu Trp Ser Lys Ile Lys Thr Ala Gly Lys Ser Val Ala Lys Ala
1 5 10 15

Ala Ala Lys Ala Ala Val Lys Ala Val Thr Asn Ala Val
20 25

<210> 15
<211> 329
<212> DNA
<213> Rana temporaria

<220>
<221> CDS
<222> (53)..(238)

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Met Phe
1

acc ttg aag aaa tcc ctc tta ctc ctt ttc ttc ctt ggg acc atc aac 106
Thr Leu Lys Lys Ser Leu Leu Leu Phe Phe Leu Gly Thr Ile Asn
5 10 15

tta tct ctc tgt gag gaa gag aga gat gcc gat gaa gaa aga aga gat 154
Leu Ser Leu Cys Glu Glu Glu Arg Asp Ala Asp Glu Glu Arg Arg Asp
20 25 30

gat ctc gaa gaa agg gat gtt gaa gtg gaa aag cga ttt ttt cca gtg 202
Asp Leu Glu Glu Arg Asp Val Glu Val Glu Lys Arg Phe Phe Pro Val
35 40 45 50

att gga agg ata ctc aat ggt att ttg gga aaa taa ccaaaaaaag 248
Ile Gly Arg Ile Leu Asn Gly Ile Leu Gly Lys
55 60

ttaaaacttt ggaaatggaa ttggaaatca tctaatgtgg aatgtcattt agctaaatgc 308

acatcaaatg tcttataaaa a 329

<210> 16
<211> 61
<212> PRT
<213> Rana temporaria

<400> 16
Met Phe Thr Leu Lys Lys Ser Leu Leu Leu Leu Phe Phe Leu Gly Thr
1 5 10 15

Ile Asn Leu Ser Leu Cys Glu Glu Glu Arg Asp Ala Asp Glu Glu Arg
20 25 30

Arg Asp Asp Leu Glu Glu Arg Asp Val Glu Val Glu Lys Arg Phe Phe
35 40 45

Pro Val Ile Gly Arg Ile Leu Asn Gly Ile Leu Gly Lys
50 55 60

<210> 17
<211> 13
<212> PRT
<213> Rana temporaria

<400> 17
Phe Phe Pro Val Ile Gly Arg Ile Leu Asn Gly Ile Leu
1 5 10

<210> 18
<211> 13
<212> PRT
<213> Rana temporaria

<400> 18
Phe Leu Pro Leu Ile Gly Arg Val Leu Ser Gly Ile Leu
1 5 10

<210> 19
<211> 13
<212> PRT
<213> Rana temporaria

<400> 19
Leu Leu Pro Ile Val Gly Asn Leu Leu Lys Ser Leu Leu
1 5 10

<210> 20
<211> 13
<212> PRT

<213> Rana temporaria

<400> 20
Leu Leu Pro Ile Leu Gly Asn Leu Leu Asn Gly Leu Leu
1 5 10

<210> 21
<211> 13
<212> PRT
<213> Rana temporaria

<400> 21
Leu Leu Pro Ile Val Gly Asn Leu Leu Asn Ser Leu Leu
1 5 10

<210> 22
<211> 13
<212> PRT
<213> Rana temporaria

<400> 22
Val Leu Pro Ile Ile Gly Asn Leu Leu Asn Ser Leu Leu
1 5 10

<210> 23
<211> 13
<212> PRT
<213> Rana temporaria

<400> 23
Phe Leu Pro Leu Ile Gly Lys Val Leu Ser Gly Ile Leu
1 5 10

<210> 24
<211> 12
<212> PRT
<213> Rana temporaria

<400> 24
Leu Ser Pro Asn Leu Leu Lys Ser Leu Leu Gly Lys
1 5 10

<210> 25
<211> 10
<212> PRT
<213> Rana temporaria

<400> 25
Leu Leu Pro Asn Leu Leu Lys Ser Leu Leu
1 5 10

<210> 26
<211> 13
<212> PRT
<213> Rana temporaria

<400> 26
Phe Val Gln Trp Phe Ser Lys Phe Leu Gly Arg Ile Leu
 1               5                  10

<210> 27
<211> 99
<212> DNA
<213> Phyllomedusa bicolor

<220>
<221> CDS
<222> (1)..(99)

<400> 27
atg gcc atg tgg aaa gac gtt ctg aaa aag atc ggt act gtc gcc ctc   48
Met Ala Met Trp Lys Asp Val Leu Lys Lys Ile Gly Thr Val Ala Leu
 1               5                  10                  15

cat gca ggg aag gcc gcg ctt gga gca gta gcc gac acc atc tcg cag   96
His Ala Gly Lys Ala Ala Leu Gly Ala Val Ala Asp Thr Ile Ser Gln
            20                  25                  30

taa                                                              99

<210> 28
<211> 32
<212> PRT
<213> Phyllomedusa bicolor

<400> 28
Met Ala Met Trp Lys Asp Val Leu Lys Lys Ile Gly Thr Val Ala Leu
 1               5                  10                  15

His Ala Gly Lys Ala Ala Leu Gly Ala Val Ala Asp Thr Ile Ser Gln
            20                  25                  30

<210> 29
<211> 57
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 29
atggccatgt ggaaagacgt tctgaaaaag atcggtactg tcgccctcca tgcaggg    57

<210> 30
<211> 63
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 30
ttactgcgag atggtgtcgg ctactgctcc aagcgcggcc ttccctgcat ggagggcgac 60

agt 63

<210> 31
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 31
tctagaggta ccatggccat gtggaaagac g 31

<210> 32
<211> 38
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 32
caagcttctg cagagctctt actgcgagat ggtgtcgg 38

<210> 33
<211> 60
<212> DNA
<213> Rana temporaria

<220>
<221> CDS
<222> (1)..(57)

<400> 33
atg gcc tct aga cat atg ttt ctg ccc cta atc ggg agg gtt ctc tcg 48
Met Ala Ser Arg His Met Phe Leu Pro Leu Ile Gly Arg Val Leu Ser
1 5 10 15

gga atc ctg taa 60
Gly Ile Leu

<210> 34

<211> 19
<212> PRT
<213> Rana temporaria

<400> 34
Met Ala Ser Arg His Met Phe Leu Pro Leu Ile Gly Arg Val Leu Ser
1 5 10 15

Gly Ile Leu

<210> 35
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 35
atgtttctgc ccctaatcgg gagggttctc tcgggaatcc tgtaa 45

<210> 36
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 36
ttacaggatt cccgagagaa ccctcccgat taggggcaga aacat 45

<210> 37
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 37
ggtacctcta gacatatgtt tctgccccta 30

<210> 38
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:PCR primer

<400> 38

ctgcagagct cttacaggat tcccgagag 29

<210> 39
<211> 4
<212> PRT
<213> Phyllomedusa bicolor

<400> 39
Ala Met Trp Lys
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<210> 40
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:spacer sequence

<400> 40
Ala Ser Arg His
1

<210> 41
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:spacer sequence

<400> 41
Ala Leu Trp Lys
1